

TECHNICAL MEMORANDUM

To: Frank Miller, City of San Antonio, Director of Aviation
Master Plan Committee Members

From: AECOM Team

Date: March 2, 2010

Subject: Vision 2050 – San Antonio International Airport Master Plan
Forecast Assumptions

During the February 22nd-23rd 2010 committee meetings, it was requested that the AECOM Team review and summarize the assumptions used to develop the aviation forecasts for the San Antonio International Airport (SAT) Master Plan. This technical memorandum presents an overview of the forecast methodology, assumptions and inputs that formed the basis for the development of the aviation forecasts.

FORECAST METHODOLOGY

Forecasts of aviation traffic were developed for the two major categories of commercial passenger airline activity, i.e. total enplaned passengers and total aircraft operations. Derivative forecasts were also developed for the significant components of activity within these major categories. For example, within the enplaned passenger category, forecasts were developed for domestic and international enplanements, and mainline and regional airline enplanements. Within the aircraft operations category, forecasts were developed for mainline and regional passenger aircraft operations and all-cargo, general aviation and military aircraft operations. The forecasts were developed through an extensive review of the Airport's historical aviation data, an examination of airline industry trends, analysis of current and projected economic conditions, a review of other independently prepared aviation forecasts, discussion with Airport management, and professional judgment.

FORECAST ASSUMPTIONS AND INPUTS

The assumptions used as a basis to the development of the forecasts are described below.

National Economic Outlook

National Gross Domestic Product is a good predictor of air travel demand and was therefore used as input to the analysis. Other economic events such as oil shocks impact the overall outlook for air travel demand and were also taken into account.

Socioeconomic Outlook for the San Antonio Region

Growth in the economy of the region served by an airport is a major factor affecting long-term airline traffic growth at the airport serving the region. Generally, regions with larger populations, higher levels of employment, and higher average incomes will generate a greater demand for air travel. At airports primarily serving origin-destination passengers, such as San Antonio International Airport, the demographics and economy of the service region—as measured by



population, employment, and per capita income—and airline service levels and airfares are typically the most important factors affecting airline traffic. Socioeconomic past and projected trends – for population, employment and per capita income – for the airport service region were therefore used as inputs to the forecasts.

San Antonio Region Economic Outlook and Major Industries

Economic trends in the San Antonio Region, major industries and future development in these industries generate growth and impact aviation traffic and were taken into account in the analysis.

Healthcare/bioscience

Healthcare and bioscience is a growing sector in the San Antonio Region. These industries have collectively doubled in size over the past decade. San Antonio is continuing to attract new health care/bioscience companies. Medtronic has recently announced the opening of a new Diabetes Therapy Management and Education Center in San Antonio; the company intends to hire 1,400 people to staff the new center.

Information Technology

Information technology exhibits a considerable presence in the San Antonio economy. In 2005, the industry employed 11,283 people and had an annual economic impact of \$5.3 billion. Companies continue to establish operations in San Antonio. Microsoft has recently completed its data center, which opened in September 2008 and houses many of its web-based applications and programs. Additionally, Affiliated Computer Services will be adding 300 jobs at a new 74,000 square-foot facility at Port San Antonio.

Aerospace

Aerospace has long been a significant economic component of the San Antonio Metropolitan Statistical Area (MSA). Taken as a whole, the industry employed 9,438 people and had an economic impact of \$3.8 billion in 2007, according to the most recent economic impact study for the aerospace industry in the San Antonio area. The Aerospace industry as a whole has been affected by the recession but many aerospace companies in the San Antonio MSA are maintaining a steady presence, according to the Economic Development Department.

Tourism

Tourism is a significant industry in the San Antonio MSA. The area is home to attractions that include the Alamo, Sea World, Six Flags Fiesta Texas, and the River Walk, among others. In part due to these attractions, the San Antonio MSA is a host to a significant number of large conventions, as well as substantial amount of visitor traffic to the area in connection with the Department of Defense and its operations in the San Antonio area. Although 2009 activity represents a decline from 2008, advance bookings for 2010 were strong.

Military

The Department of Defense (DOD) plays a key role in the economy of the San Antonio MSA. The United States Army and Air Force continue to operate installations in this area, including Randolph and Lackland Air Force Bases, as well as Fort Sam Houston and the Brooks City Base. According to the 2006 Economic Impact Study for DOD, military activity in the San Antonio MSA generated total employment of 195,075, and a total economic impact of \$13.3 billion. These figures include direct employment and spending not only for military employees, but also arising from DOD contracts (both for local and non-local work), the increased business volume at local civil businesses, as well as from local military retirees living in the area. These



more indirect forms of economic impact are material; in 2006, roughly as many people were employed by contractors doing work with the DOD as were employed by the military itself¹. Through military base contracts, contracts outside the San Antonio MSA and through spending of military personnel, the DOD has impacted every industry sector in the San Antonio MSA. The most pronounced impacts have occurred in the areas of manufacturing, real estate, health care and retail.

In 2005, significant changes regarding military administration and operation were adopted, as part of the Base Realignment and Closure Act (BRAC) process. The San Antonio MSA is poised to benefit from these changes, as significant resources are being shifted from other parts of the country to San Antonio; in 2006 it was estimated that 4,000 new personnel would be relocating to San Antonio between 2006 and 2011, and that construction cost of the infrastructure required to support them (and their families) during this period would amount to \$2.1 billion. Since that period, the number of new personnel has grown to 12,500 and the construction figure has risen to \$2.8 billion, according to a bulletin released by the DOD in March 2009. This is more than three times the personnel investment and two and a half times the capital investment made by Toyota when it recently opened its new auto manufacturing facility in San Antonio. Nearly all of this new development is taking place at Fort Sam Houston, where 1,656 additional military personnel have already relocated as of the end of 2008. Many of the new jobs created in San Antonio require highly skilled labor. Fort Sam Houston is known as the “Home of Army Medicine” and is recognized as being the largest and most important military medical training facility in the world. Of the 12,500 new positions to be created between 2006 and 2011 at Fort Sam Houston, nearly 7,000 of them will be related to the medical field, including 2,130 new positions at the San Antonio Military Medical Center.

It is worth noting that some military installations will face decreases in staff as a result of BRAC; in total nearly 4,000 military and civilian employees will be lost, largely from Brooks City Base and Lackland Air Force Base. Regardless, the net increase of employment and investment (in terms of construction) will represent one of the largest single drivers for economic growth ever seen in the San Antonio area.

San Antonio International Airport Historical Traffic and Trends

Long and short-term trends of historical aviation demand at SAT were analyzed and used to derive future trends. Traffic was also compared to U.S. and benchmark airports.

FORECAST SCENARIOS

For planning purposes and to account for inherent uncertainty of aviation demand forecasting, a range of enplanement forecasts (baseline, low-growth, and high-growth) were developed to account for potential levels of future demand under various economic and airline industry conditions. Together, these forecasts represent a reasonable range of potential future enplanement levels.

For planning purposes, the baseline forecast is used in the subsequent steps of the Master Plan. Specific assumptions for this scenario include:

- Recession ends 2Q 2010 and the US experiences moderate economic growth thereafter

¹ In 2006, Department of Defense contractors employed 44,423 people in the San Antonio MSA, while the military itself employed 44,255 people.

- Oil prices stabilize near current levels
- Assumes status quo air of SAT air service profile
- Airline market share distribution is maintained
- Southwest remains the dominant carrier
- Projections based on established trends
- Moderate new entrant/LCC growth
- International service by 2020. It was originally anticipated that new international service to Europe would start in 2015 but in light of the slow economic recovery, this estimate has been reevaluated and transoceanic service is anticipated by 2020.
- Cargo generates modest growth
- General aviation activity continues at trend

INTERNATIONAL SERVICE

Historically, international enplanements have accounted for approximately two percent to three percent of total SAT enplanements. The Airport counts international enplanements as those passengers that fly nonstop from SAT to an international destination. The passenger that flies from SAT to DFW and at DFW boards a flight to Europe is counted by SAT as a domestic enplanement. True international demand is best determined by analyzing international origin-destination traffic which will include the passenger that connects over DFW enroute to an international destination.

International origin-destination traffic has increased at an annual rate of approximately two percent from 2000 to 2008 in contrast to international enplanements which have decreased by an annual rate of approximately -3.8 percent over the same period. Based on this analysis it was assumed that over time, the demand for nonstop international service would increase as origin-destination traffic reaches levels that justify the addition of new nonstop international flights.

Because the volume of international activity at SAT is relatively small, averaging approximately five to six departures per day, a single extra flight can have a significant impact on the percent change in annual activity. Therefore, growth in international activity tends to occur in relatively large step increases in contrast to a steady upward trend in demand. It was assumed that by 2020 a daily nonstop flight from SAT to Europe would be added to the schedule. The European destination would likely be London, England; Frankfurt, Germany or Paris, France depending largely on the composition of airline alliances that are in place at that time and their respective European hubs. Additional service to Mexico, the Caribbean, and Canada was also assumed to be incrementally added to the schedule over the forecast horizon.

FORECAST RESULTS SUMMARY

The results for the baseline Master Plan forecast are presented below in Table 1 along with a summary of key forecast results. The baseline forecast is considered the “most likely” scenario of the three forecast scenarios developed. The most recent full-year of historical aviation activity is calendar year 2008. Estimates for 2009 were based on year-to-date statistics through April

2009 and forecasts are presented for key forecast milestones at 2010, 2015, 2020, 2030, and 2050.

Table 1: Baseline Forecast Summary

			Baseline Forecast				
	Actual 2008	Estimate 2009	2010	2015	2020	2030	2050
Enplanements	4,167,000	3,750,000	3,863,000	4,814,000	5,501,000	6,940,000	10,501,000
Domestic	4,098,000	3,688,000	3,794,000	4,600,000	5,236,000	6,549,000	9,868,000
International	69,000	62,000	69,000	214,000	264,000	391,000	633,000
Air Cargo Tonnage	141,399	117,899	124,155	155,187	189,176	274,854	553,472
Aircraft Operations							
Passenger Aircraft	96,500	84,900	91,200	114,600	126,800	157,000	214,600
All-Cargo	7,206	5,800	6,200	7,600	8,900	11,800	20,000
Air Taxi	24,776	25,000	25,000	26,000	28,000	31,000	37,000
General Aviation	83,982	73,000	71,000	76,000	76,000	76,000	76,000
Military	4,030	4,300	4,000	5,000	5,000	5,000	6,000
Total Aircraft Operations	216,494	193,000	197,400	229,200	244,700	280,800	353,600

For the baseline forecast, enplaned passengers are expected to increase from approximately 4.2 million in 2008 to approximately 10.5 million in 2050 which equates to an annual long-term growth rate of 2.2 percent. This is slightly less than the average long-term historical growth of 2.4 percent from 1990 to 2008, but greater than the 1.7 percent annual growth from 2000 through 2008.

Over the short-term, enplaned passengers are projected to decline by approximately 10 percent to 3.8 million in 2009 and then increase by approximately 3.0 percent in 2010 as economic conditions are assumed to improve. Enplaned passengers are projected to increase at an annual rate of 4.5 percent from 2010 through 2015 reaching approximately 4.8 million in 2015. Annual growth rates are then expected to equate to 2.7 percent from 2015 through 2020, 2.4 percent from 2020 to 2030, and 1.7 percent from 2030 through 2050.

Domestic enplaned passengers accounted for approximately 98 percent of total passengers in 2008 and international passengers accounted for the remaining 2 percent. International passengers are expected to increase at a faster annual rate of 5.4 percent compared to 2.1 percent for domestic passengers and account for 5.6 percent of total passengers by 2030 and 6.4 percent by 2050.

Southwest Airlines, which held the largest market share in 2008 at approximately 35 percent of total enplanements, is expected to maintain its dominant position over the forecast horizon. The network carriers such as American Airlines, Delta Air Lines, Continental Airlines and United Airlines are expected to maintain or lose a small portion of their market share as low cost carriers such as AirTran Airways and Frontier Airlines are projected to increase their combined market share from approximately 4.5 percent in 2008 to 10 percent in 2030.

Air cargo tonnage which includes freight and mail is expected to decrease by approximately 16.6 percent from 2008 to 2009. This decrease is largely the result of weak national and global economic conditions. Cargo tonnage is expected to begin a recovery in 2010 of 5.3 percent over

2009 totals. From 2008 to 2050 cargo tonnage is projected to increase at an average of 3.3 percent per year.

Historically, total aircraft operations had increased at an average annual rate of approximately 1.6 percent. Total aircraft operations includes flight activity by passenger, all-cargo, general aviation (GA), air taxi, and military aircraft. Because of the significant decrease in passengers and cargo tonnage from 2008 to 2009, aircraft operations are projected to fall approximately 10.9 percent in 2009. Over the forecast horizon, aircraft operations are projected to rise 1.2 percent annually from 216,494 annual takeoffs and landings in 2008 to 280,800 in 2030 and 353,600 in 2050. Passenger aircraft operations are projected to rise from 96,500 operations in 2008 to 157,000 operations in 2030 and 214,600 in 2050. GA operations, which represented approximately 39 percent of total operations in 2008, are expected to fall by approximately 9 percent in 2009 and then remain at near that level over the forecast horizon as more GA activity is expected to move to Stinson Municipal Airport.

